Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A transmission medium for use in broadband applications, the transmission medium comprising:

a substrate having a substantially flat top surface and two lateral faces;

a signal conductor and two ground conductors placed on the top surface of the substrate forming a ground-signal-ground pattern along a common plane, wherein ~~the~~each ground conductor~~s~~ extend~~s~~ to ~~the~~an edge~~s~~ of the top surface of the substrate and wraps around a lateral face of the substrate;

~~a respective electrical side-wall boundary on each of the two lateral faces of the substrate;~~ and

a base.

2. (Currently amended) The transmission medium of claim 1 wherein the base defines a cavity underneath substantially ~~the~~an entire length of the substrate.

3. (Currently Amended) The transmission medium of claim 1 wherein the base provides a common ground potential that is coupled to the two ground conductors ~~and each of the two electrical side-wall boundaries~~.

4. (Original) The transmission medium of claim 2 wherein the cavity defined by the base is air filled.

5. (Original) The transmission medium of claim 2 wherein the cavity defined by the base is filled with a dielectric material.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Original) The transmission medium of claim 1 further comprising a Monolithic Integrated Circuit.

10. (Original) The transmission medium of claim 9 wherein the Monolithic Integrated Circuit comprises a top surface and wherein the Monolithic Integrated Circuit is arranged such that the top surface is approximately coplanar with the top surface of the substrate.

11. (Original) A method of fabricating a transmission medium for use in broadband applications comprising the steps of:

providing a pre-fired ceramic base;

providing a co-planar waveguide having a signal conductor and two ground conductors;

arranging the co-planar waveguide on the base;

removing base material from underneath the co-planar waveguide thereby making a cavity; and

co-firing at least the base and the co-planar waveguide.

12. (New) A transmission medium for use in broadband applications, the transmission medium comprising:

a substrate having a substantially flat top surface and two lateral faces;

a signal conductor and two ground conductors placed on the top surface of the substrate forming a ground-signal-ground pattern along a common plane, wherein each ground conductor extends to an edge of the top surface of the substrate;

a respective electrical side-wall boundary on each of the two lateral faces of the substrate; and

a base,

wherein the base defines a cavity filled with a dielectric material underneath substantially an entire length of the substrate.

13. (New) A transmission medium for use in broadband applications, the transmission medium comprising:

a substrate having a substantially flat top surface and two lateral faces;

a signal conductor and two ground conductors placed on the top surface of the substrate forming a ground-signal-ground pattern along a common plane, wherein each ground conductor extends to an edge of the top surface of the substrate;

a respective electrical side-wall boundary on each of the two lateral faces of the substrate; and

a base,

wherein the electrical side-wall boundaries comprise a plurality of conductive vias connecting the top surface of the substrate to the base.

14. (New) The transmission medium of claim 13 further comprising a Monolithic Integrated Circuit.

15. (New) The transmission medium of claim 14 wherein the Monolithic Integrated Circuit comprises a top surface and wherein the Monolithic Integrated Circuit is arranged such that the top surface is approximately coplanar with the top surface of the substrate.

16. (New) The transmission medium of claim 13 wherein the base defines a cavity underneath substantially an entire length of the substrate.

17. (New) The transmission medium of claim 13 wherein the base provides a common ground potential that is coupled to the two ground conductors and each of the two electrical side-wall boundaries.

18. (New) The transmission medium of claim 16 wherein the cavity defined by the base is air filled.

19. (New) The transmission medium of claim 16 wherein the cavity defined by the base is filled with a dielectric material.

20. (New) A transmission medium for use in broadband applications, the transmission medium comprising:

a substrate having a substantially flat top surface and two lateral faces;

a signal conductor and two ground conductors placed on the top surface of the substrate forming a ground-signal-ground pattern along a common plane, wherein each ground conductor extends to an edge of the top surface of the substrate;

a respective electrical side-wall boundary on each of the two lateral faces of the substrate; and

a base,

wherein the electrical side-wall boundaries comprise a plurality of conductive ribs electrically connecting the top surface of the substrate to the base.

21. (New) The transmission medium of claim 20 wherein the base defines a cavity underneath substantially an entire length of the substrate.

22. (New) The transmission medium of claim 20 wherein the base provides a common ground potential that is coupled to the two ground conductors and each of the two electrical side-wall boundaries.

23. (New) The transmission medium of claim 21 wherein the cavity defined by the base is air filled.

24. (New) The transmission medium of claim 21 wherein the cavity defined by the base is filled with a dielectric material.

25. (New) The transmission medium of claim 20 further comprising a Monolithic Integrated Circuit.

26. (New) The transmission medium of claim 25 wherein the Monolithic Integrated Circuit comprises a top surface and wherein the Monolithic Integrated Circuit is arranged such that the top surface is approximately coplanar with the top surface of the substrate.